

Claims

1. (Currently Amended) A sensor, comprising:

a signal source that emits a physical signal;

a signal detector at a distance from the signal source to receive the physical signal;

an evaluation unit which is connected to the signal detector and evaluates the received physical signal to determine the relative distance between the signal source and the signal detector,

wherein the signal source and the signal detector are situated on separate substrate bodies; and

a control unit is connected to the signal source, the signal detector, and the evaluation unit,

wherein the signal source, signal detector and the evaluation unit can each be individually turned on

and off by the control unit.

2.(amended) The sensor of claim 1, wherein the evaluation unit includes a memory device having characteristic information indicative of the signal source.

3.(amended) The sensor of claim 1, wherein the spatial distance between the signal source and the signal detector is constant, and the transmission properties of the transmission channel between the signal source and the signal detector are variable.

4.(amended) The sensor of claim 1, wherein the spatial distance between the signal source and the signal detector is variable, and that the transmission properties of the transmission channel between the signal source and the signal detector are constant.

5.(amended) The sensor of claim 3, wherein the evaluation unit is configured and arranged such that the gas density or the transport rate or the throughflow quantity can be determined from the relative distance.

1 6.(amended) The sensor of claim 4, wherein the evaluation unit is configured and arranged such
2 that the force acting on the sensor can be determined from the relative distance.

1 7.(amended) The sensor of claim 6, wherein the control unit is connected to the signal source and
2 controls it, and that the evaluation unit is connected to the control unit in such a way that the
3 information regarding the signal source can be updated with control data received from the control
4 unit.

1 8.(amended) The sensor of claim 1, wherein the evaluation unit and is integrated into at least one
2 of the substrate bodies.

1 9.(amended) The sensor of claim 8, wherein the evaluation unit is situated in the substrate body
2 directly adjoining the signal detector.

1 10.(amended) The sensor of claim 8, wherein the evaluation unit is integrated into the second
2 substrate body and the control unit is integrated into the first substrate body.

1 11.(amended) The sensor of claim 10, wherein the evaluation unit includes means for amplifying the
2 signal.

1 12.(amended) The sensor of claim 3, wherein the second substrate body, in which the signal detector
2 is situated includes a diaphragm.

1 13.(amended) The sensor of claim 12, further comprising a damping device to damp the diaphragm.

1 14.(amended) The sensor of claim 1, wherein the signal detector is sub-divided into a plurality
2 detector elements sufficient to provide a measure of spatial resolution.

1 15.(amended) The sensor of claim 14, wherein said evaluation unit includes means for processing
2 the spatially resolved measurement.

1 16.(amended) The sensor of claim 15, wherein conductor tracks are situated in the respective
2 substrate is used to form the signal source.

1 17.(New) A semiconductive sensor, comprising:

2 a signal source that emits a physical signal;

3 a signal detector at a distance from the signal source to receive the physical signal;

4 an evaluation unit which is connected to the signal detector and evaluates the received
5 physical signal to determine the relative distance between the signal source and the signal detector,
6 wherein the signal source and the signal detector are situated on separate semiconductive substrate
7 bodies; and

8 a control unit is connected to the signal source, the signal detector, and the evaluation unit,
9 wherein the signal source, signal detector and the evaluation unit can each be individually turned on
10 and off by the control unit.

1 18.(New) A semiconductive sensor, comprising:

2 a signal source that is mounted on a first substrate and emits a physical signal;

3 a signal detector that is mounted on a second substrate, at a distance from the signal source to
4 receive the physical signal;

5 an evaluation unit which is connected to the signal detector and evaluates the received
6 physical signal to determine the relative distance between the signal source and the signal detector;
7 and

8 a control unit that provides control signals to the signal source, the signal detector, and the
9 evaluation unit to selectively turn the signal source, the signal detector, and the evaluation unit on
10 and off.